

**REMARKS**

Upon entry of this response, claims 1-7, 13-20, and 26-37 are pending, and of these, claims 1, 14, and 27 are independent. Also, claims 30 and 35 are cancelled.

**Rejections under 35 U.S.C. 112, second paragraph**

Applicants have deleted claims 30 and 35 to render this rejection moot.

**Art Based Rejections**

As described in greater detail below, Applicants respectfully assert that none of the references describe or suggest the invention of the presently amended claims. In fact, none of the references describe displaying genotype calls in a graphical user interface that allows the user to easily navigate regions of the same sequence in different panes with varied levels of resolution by making a selection of a sub-region of a displayed sequence in one pane that is displayed in greater detail in a second pane.

For example, the references generally describe characterizing genotypes and monitoring fluorescent signals. Importantly, the references do not describe displaying genotype calls in a graphical user interface that includes multiple panes that display regions of the same sequence comprising genotype calls where the user can easily navigate the regions making selections in one pane that results in a display of the selected region at an increased resolution in another pane. In the present example, the graphical user interface is a useful tool that allows a user to dynamically navigate a sequence region at varying resolutions and visually see the positional relationship of genotype calls. This ability provides the user with an efficient means to derive biological meaning from experiments carried out on individual samples.

Applicants respectfully assert that the language of claims 1, 14 and 27 constitutes claim scope that none of the references applied in the rejections describe or suggest either alone or in combination.

**Reply to Claim Rejections – 35 U.S.C. §102**

Claims 1-11, 13-20, 26-27, 31-34, 36 and 37 are rejected under 35 U.S.C. §102(c) over Neville (U.S. 2005/0196771 A1).

As described above, Applicants respectfully assert that Neville does not describe the invention of the presently amended claims. In particular, Neville does not describe displaying a graphical user interface with a first pane that displays a graphical representation of a first region of sequence associated with the genotype data sets, a second pane that displays a graphical representation of a second region of sequence selected by the user from the first region of sequence, and a third pane that displays a graphical representation of a third region of sequence selected by the user from the second region of sequence that includes a representation of sequence composition comprising the one or more genotype calls of each genotype data set. Therefore, Applicants respectfully request that the rejections be withdrawn.

In the present Office Action, the Examiner states that “Neville et al. disclose displaying one or more genotype calls in a first, second and third pane (figure 7, and figure 12A-j)”. (See page the bottom of page 3). However, Neville characterize those figures as “[0042] FIGS. 7A-7C shows a table of oligonucleotides used for amplification and INVADER assay detection of CYP 2D6 alleles.” and “[0047] FIGS. 12A-12J shows a table of oligonucleotides used for amplification and INVADER assay detection of CYP 2D6 alleles.” Consequently, it is apparent that these figures do not relate to genotyping calls, but to oligonucleotides for amplification. As such, Applicants respectfully assert that the present rejection is misplaced and must be withdrawn.

On the top of page 5 of the present Office Action, the Examiner states that

The applicants state that Neville et al. does not disclose using a first, second, or third pane as required by claims 1, 14, and 27. The Examiner disagrees. Neville et al. does disclose using multiple panes (Figures 1-21).

A close look at Figures 1-21 shows that they are not panes as recited in Applicants claims. They are just patent drawings to represent some information. For example, Fig. 1 shows a schematic diagram; 2 shows an input target sequence; 3 shows a work flow diagram; 4 shows a flow chart; 5 shows PCR primers; 6 shows a schematic representation; 7 shows a table of oligonucleotides; 8 shows representative data; 9 shows summary of data from a screen; 10 shows a chart with a summary of data; 11 shows a chart of haplotype predictions; 12 shows a table of oligonucleotides; 13 shows a graph with copy number information; 14 shows a chart with primers; 15 shows detection assay

components; 16 shows an assay chart; 17 shows a chart with alleles; 18 shows a similar chart; 19 shows a chart with a matrix comparing a detection assay and genotype; and 21 shows a matrix as in 19. In sum, none of these figures shows a GUI or even one, two or three panes in a GUI. Consequently, Applicants respectfully assert that the Examiner is mistaken and the present rejection must be withdrawn.

Additionally, not only do the patent figures fail to show any panes in a GUI, they do not graphically display more detailed views from preceding panes. Using claim 1 as an example of the present invention, the last limitation states:

displaying one or more of the genotype calls of each of the genotype data sets to a user in a graphical user interface comprising a first pane that displays a graphical representation of a first region of sequence associated with the genotype data sets, a second pane that displays a graphical representation of a second region of sequence selected from the first region of sequence, and a third pane that displays a graphical representation of a third region of sequence selected from the second region of sequence, wherein the graphical representation of the second region includes greater detail than the graphical representation of the first region, the graphical representation of the third region includes greater detail than the graphical representation of the second region and comprises a representation of sequence composition including the one or more genotype calls of each genotype data set.

A review of the figures shows that there are no GUIs that show three panes in which there is a first pane, a second pane which displays a more detailed portion of the first pane, and a third pane which displays a more detailed portion of the second pane. Additionally, there is no other disclosure in the text that describes a GUI with three panes as claimed above. Accordingly, Applicants respectfully assert that Neville does not show this feature of the claims and must be withdrawn as a reference.

The only reference to any user interface in Neville is made with respect to receiving sequence data. However, this sequence data is not a genotype call, but raw sequence from which to prepare primer sets. See paragraphs 21-24, page 3-4.

## CONCLUSION

In conclusion, claims 1, 14, and 27 include a graphical user interface with multiple panes that display graphical representations of a sequence and genotype calls in varying levels of detail. Applicants respectfully assert that Neville applied under 35 U.S.C. §102 does not describe such elements and thus each of said claims are patentable. Further, since claims 2-7, 13, 15-20, 26, 28, 29, 31-34, and 36-37 each depends from one of claims 1, 14, or 27 in their chain of dependency each are thus patentable for the same reasons.

For these reasons, Applicants believe all pending claims are now in condition for allowance. If the Examiner has any questions pertaining to this application or feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 731-5021 .

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account 01-0431.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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Date: December 15, 2006

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